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STUDIES OF PERUVIAN BIRDS. NO. XXVIII[1]

NOTES ON THE GENERA *MYIODYNASTES, CONOPIAS, MYIOZETETES,* AND *PITANGUS*

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I am greatly indebted to Messrs. C. C. Gregg and Rudyerd Boulton of Field Museum of Natural History, Chicago, for the loan of certain critical specimens used in the following study.

Names of colors are capitalized when direct comparison has been made with Ridgway's, 'Color Standards and Color Nomenclature.'

Myiodynastes luteiventris luteiventris Sclater

Myiodynastes luteiventris SCLATER, 1859 (May), P. Z. S. London, XXVII, p. 42—"Mexico merid., Guatemala, et America centrali" = Orizaba, Mexico; British Mus.

The arrangement of a series of one hundred and seventy-three specimens of this species has not been easy. The form described as "*swarthi*," from Arizona, is relatively constant in its characters, judging by material at hand, but typical *luteiventris* is more variable and often indistinguishable in individual specimens. Both forms are migratory and occur together in migration over most of the breeding range of *luteiventris* as well as in most of the transient and wintering range of that form, although "*swarthi*" appears to winter farther south than does any true *luteiventris*. This matter is discussed in greater detail below.

Further complications are caused by the fact that the species molts in its winter quarters and that the birds are already in slightly worn plumage when they arrive in their breeding range, becoming progressively more abraded until they reach their southern home again and renew their dress. Very worn specimens of the two forms may be indistinguishable, especially in dorsal coloration, and, in any case, there is considerable difference between the ragged individuals that arrive in South America in the fall and the freshly plumaged birds that are preparing to start north for their nesting grounds. By far the larger part of the specimens at hand from Arizona and northern Central America are intermediate between these two extremes and hence comparable to neither.

[1] Previous papers in this series comprise American Museum Novitates, Nos. 500, 509, 523, 524, 538, 545, 558, 584, 646, 647, 668, 703, 728, 753, 756, 757, 785, 819, 860, 861, 862, 889, 893, 894, 917, 930, and 962.

Taking a series of specimens from the Huachuca Mountains and one skin from the Chiricahua Mountains, Arizona, as typical of "*swarthi*" and comparing it with a similar series of typical *luteiventris* from eastern Mexico, the distinctions of "*swarthi*" are apparent although they are none too positive. The under parts of "*swarthi*" are more consistently pale, apparently never becoming as deeply yellow as some *luteiventris*, although other *luteiventris* are just as pale. The streaking on the under parts of "*swarthi*" is less sharply defined, being of a somewhat browner, less blackish, hue, averaging a little narrower, more frequently reduced to hair lines on the throat and more often decidedly reduced in prominence on the flanks though sometimes strong and well-marked. The upper parts are similarly duller, with the shaft-streaks of the crown averaging narrower and the stripes on the back averaging narrower and less sharply defined, with margins of more buffy, less brownish or cinnamomeous, tone. The top of the head and back of the neck often have a definite grayish tinge. The outer margins of the greater and median upper wing-coverts are somewhat broader and whiter. The malar stripe reaches a paler and grayer extreme; the cinnamomeous color of the rump and upper tail-coverts averages paler. Young birds resemble the adults in most of these particulars, differing by the much narrower central stripe on the median rectrices and the stronger striping on the head and back where, however, the pale tips of the feathers break the continuity of the stripes and produce a somewhat spotted appearance. The concealed crest on the top of the head is pale buff or pale cinnamomeous in the young of both forms, not yellow. The outer margins of the upper wing-coverts are narrower than in the adults and have more strongly ochraceous basal portions.

Worn specimens of "*swarthi*" have the upper surface darkened by the wearing away of much of the pale margins of the feathers, leaving the remainder of such margins faded and more grayish than in fresh skins. Worn *luteiventris* also are darker for the same reason but the faded edges of the feathers may approach the color of fresher specimens of "*swarthi*." The comparative breadth and sharpness of the dark central streaks above and below thus form the best criterion of distinction of the two forms. Faded *luteiventris* may be very pale below (one such specimen from Guatemala is nearly white), but the streaks remain sharper than in "*swarthi*." Nevertheless, some specimens from the apparent breeding range of *luteiventris* are not clearly separable from "*swarthi*."

Using the characters shown by the series here accepted as typical of the two forms, it appears that a series of birds from northwestern Mex-

ico (Sinaloa, Jalisco, Tepic, and Colima) are best referred to the Arizona form, while specimens from the eastern and southern parts of this country (Nuevo Leon, Tamaulipas, Tehuantepec, and Hidalgo) agree with Vera Cruz specimens and must be referred to *luteiventris*. Yucatan birds also belong to *luteiventris*.

Guatemalan and Costa Rican specimens are mostly *luteiventris*, but I have three from each country that are slightly closer to "*swarthi*," two taken in March, one in April, one in middle May, and one in August (one is without date but is a spring bird, judging by the condition of the plumage). All but one of the Nicaraguan birds at hand are *luteiventris;* one March male is closer to "*swarthi*."

I have no evidence of the breeding of the species south of Costa Rica nor of the occurrence of individuals from Costa Rica northward in winter, except a single specimen from "Yucatan, Feby.," without data as to collector, year, sex, or other details. It is, therefore, not to be accepted without some question. Records from South America and Panamá are not numerous. We have two specimens from Panamá (March and September) and one skin from Colombia (October). There is a record from Sarayacu, Ecuador, of a bird collected by Buckley, now in the British Museum. Peruvian records are not numerous but are supplemented by sixteen examples before me. There is one record from Bolivia, supplemented by four additional specimens now at hand. Apparently, therefore, Perú is in the heart of the winter range of the species, if the number of specimens in collections is any criterion.

The two Panamanian birds and the Colombian specimen belong to typical *luteiventris* as do most of the Peruvian skins. Two birds from eastern Perú are somewhat doubtfully referable to "*swarthi*." Both are immature, collected in October, whereas all but one of the remainder of the Peruvian series are adult. Nevertheless, these two young birds are much like young Arizona specimens although one of them is badly worn.

The most important Peruvian specimen is the type of *vicinior* Cory, a young male from near Yurimaguas, collected in October. Careful comparison of this specimen with young birds from Arizona and others from Guatemala leaves little doubt that this specimen is a migrant individual of the Arizona form. Since *vicinior* antedates "*swarthi*" it must become the name of the Arizona subspecies.

The type of *vicinior* is in full juvenal plumage, not greatly worn, and shows no signs of molt. It is even more definitely assignable to the Arizona series than the other two young Peruvian specimens mentioned above. Judging by the date and the fact that even central and south-

east Peruvian skins of later date are referable to *luteiventris*, it may be presumed that the Yurimaguas individual was in transit to some point still farther south and that Yurimaguas is not necessarily in the full wintering region. More material will be required to determine the exact extent of the winter range.

Specimens from southeastern Perú are not as dark as those from central Perú but are not pale enough for *vicinior*. They are fresher than the central Peruvian skins, which accounts for their clearer color, but are comparable to the Bolivian skins from which they can be distinguished on the characters determined for the separation of the two forms.

Four Bolivian specimens, all taken in February, seem to belong to *vicinior*. One of them is definitely of this subspecies. A second is more deeply ochraceous on the margins of the mantle-feathers than any Arizona bird, but the outer borders of the upper wing-coverts are very broad and whitish and the pectoral striping is brownish and dull. The third skin is more heavily striped below but the upper parts, though moderately heavily striped, are relatively pale and buffy on the edges. A longer series would be necessary to determine whether true *luteiventris* reaches Bolivia but the evidence now available indicates that the form breeding farther to the northward, in Arizona, migrates the greater distance to the southward.

I have no theory to account for the extensive migration of *luteiventris*. It breeds within the tropics of the northern hemisphere and migrates to the tropics of the southern continent. Its movements, apparently, are correlated with those of *vicinior* which is found from sea-level up to 8000 feet and breeds at least from southern Sinaloa, Mexico, to the Huachuca Mountains of Arizona, and which evacuates the entire region, tropical and temperate, in August or September, returning in April and breeding in late April and May.

The Peruvian series demonstrates the annual molt as beginning in October or shortly before and terminating in late February. The entire process is thus carried out in winter quarters.

Other Peruvian records are not to be assigned to one subspecies or the other without careful examination of the specimens in question. These are but two. Jelski collected a young male at Monterico (date not given); Stolzmann obtained one male at Yurimaguas on March 14.

Sclater (1888, 'Cat. Birds Brit. Mus.,' XIV, p. 184) considered "*nobilis*" (sensu latu) as an intermediate form connecting *luteiventris* with "*audax*" [=*maculatus*] and "passing into its northern and southern representatives at the extremities of its range." There is some justifi-

cation for this belief, although I have seen no specimens which might be considered as intermediates of this character.

There are so many features in common between the *luteiventris* and *maculatus* groups that a common origin can hardly be doubted. The dusky chin of *luteiventris* is the only constant character which distinguishes that species. I have seen no tendency toward the development of such a marking in the *maculatus* group, although the width of the marking is very variable in *luteiventris* and might be expected to disappear entirely in extreme examples. Other characters are shared, either singly or in various combinations, with the members of the *maculatus* group.

The greatest obstacle to the amalgamation of the two groups is the apparent occurrence of both together in certain parts of Central America. There are no records of *maculatus* from Nicaragua or eastern Costa Rica where *luteiventris* exists, and, to this extent, the two species replace each other, but both appear to be found in eastern Mexico, western Costa Rica, and Guatemala. Future field work may uncover some differentiation in habitat or season of which I have no evidence at present, but it is equally possible that the two groups, one resident and one migratory, are definitely separable specifically as at present considered.

Myiodynastes luteiventris vicinior Cory

Myiodynastes luteiventris vicinior Cory, 1916, Field Mus. Nat. Hist. Publ., Orn. Ser., I, p. 342—Yurimaguas [Puerto Arturo], Perú; ♂; Field Museum Nat. Hist.

Myiodynastes luteiventris swarthi van Rossem, 1927 (March 15), Condor, XXIX, p. 126—Huachuca Mountains, Arizona; ♂; Dickey Coll.

This form is discussed in the preceding pages with the typical form. Three specimens, including the type, all of them immature, constitute the only Peruvian specimens I have seen which can be satisfactorily distinguished from typical *luteiventris*. The winter home is in Bolivia but there is no certainty that the form remains in Perú at this season, since the three specimens may all be migrants to the more southern region. The localities are Puerto Arturo, Perené, and the mouth of the Río Urubamba; the dates of collection are all in October. Bolivian specimens were taken in February.

Specimens Examined

M. l. luteiventris.—Mexico: Nuevo Leon, Boquilla, 3 ♂, 3 ♀; Vera Cruz, Jalapa, 2 ♂; Orizaba, 1 (?); Potrero, 1 ♂, 1 ♀; Paraje Nuevo, 2 ♂; Tehuantepec, Santa Efigenia, 1 ♀; Tamaulipas, Río Cocono, 1 ♂; Vicotencatl, 1 ♂; Yucatan, Calotmal, 1 (?); "Yucatan," 3 (?). Guatemala: Finca Sepacuite,

5 ♂, 1 ♀; Finca Cipres, 12 ♂, 14 ♀, 1 (?); La Perla, 2 ♂, 1 ♀; Secanquim, 1 ♂; Finca Chamá, 2 ♂; Finca La Primavera, 2 ♀; Carolina, 1 ♂, 3 ♀; Hacienda California, 2 ♀; Vera Paz, 1 (?); "Coban to Clusac," 1 (?); "Guatemala," 7 (?). NICARAGUA: Matagalpa, 1 ♂, 1 ♀; Ocotal, 1 ♀; Chinandega, 1 ♂, 1 ♀; Volcán Viejo, 2 ♀; San Rafael del Norte, 1 ♂. COSTA RICA: Aquinares, 2 ♂, 3 ♀; Monte Redondo, 1 ♀; Las Cañas, 1 ♀; Irazú, 1 ♂; Miravalles, 1 ♂, 1 ♀; Navarrito, 1 ♀; Santa Maria de Dota, 2 ♂, 1 ♀. PANAMÁ: Veraguas, Santa Fé, 1 ♂; El Villano, 1 ♂. COLOMBIA: Chicoral, 1 ♀. PERÚ: Río Ucayali, Santa Rosa, 1 ♂; Chanchamayo Valley, Perené, 3 ♂, 4 ♀; Río Colorado, 1 ♂[1], 1 ♀[1]; Astillero, 1 ♂, 2 ♀.

M. l. vicinior.—UNITED STATES: Arizona, Huachuca Mts., 8 ♂, 6 ♀; Chiricahua Mts., 1 ♂. MEXICO: Sinaloa, Río Juanna Gomez, 2 ♂, 1 ♀; Juan Lisiarraga Mts., 3 ♂, 2 ♀; Jalisco, Wakenakili Mts., 1 ♂, 2 ♀; Sal si Puedes, 1 ♀; Tepic, Rancho San Pablo (Nayarit), 2 ♂, 1 ♀; Guadalajara, 1 ♂; Colima, 1 (?). GUATEMALA: Finca Cipres, 1 ♂; Finca La Primavera, 1 ♀; Carolina, 1 ♂. NICARAGUA: San Rafael del Norte, 1 ♂. COSTA RICA: Aquinares, 2 ♂; (no locality), 1 ♂. PERÚ: Puerto Arturo, Yurimaguas, 1 ♂[1] (type); Perené, 1 ♀, mouth of Río Urubamba, 1 ♂. BOLIVIA: Tres Arroyos, Espíritu Santo, 1 ♂, 1 ♂[1]; Province of Sara, 2 ♂.

Myiodynastes maculatus maculatus (Müller)

Muscicapa maculata P. L. S. MÜLLER, 1776, 'Natursyst.,' Suppl., p. 169—Cayenne.

Musicapa audax GMELIN, 1789, 'Syst. Nat.,' I (2), p. 934—based on DAUBENTON, 'Pl. Enl.' 453, fig. 2; Cayenne.

It is rather unfortunate that the name, *maculatus*, is based on the Cayenne bird since the Cayenne population appears to be not as constant as could be desired. In general, it seems to be more closely allied to the Amazonian population than to any other and I have, accordingly, adopted the name for the subspecies which inhabits the Amazonian lowland region from Faro and Monte Alegre, on the north bank of the great river, and Pará and western Maranhão, south and east of its mouth, westward to eastern Perú and eastern Ecuador, with a possible hiatus on the lower Tapajoz, Xingú, and Tocantins rivers.

This form is characterized by its small bill which is relatively short, relatively narrow, and relatively evenly tapered in front of the nostrils. The under parts are only moderately heavily streaked, with the stripes not as dark nor as sharply defined as in some other forms, although they are more prominent than in *M. m. nobilis* of the Santa Marta region. The throat is usually finely streaked and there is a wash of yellow on the breast, sides, flanks, and under tail-coverts which is as well developed as in any other form, more so than in some others, including *nobilis*. The back is varied with dusky brown centers on the feathers and pale mar-

[1] Specimens in Field Museum of Natural History, Chicago.

gins which sometimes are quite brownish but which average more buffy or even decidedly grayish; the top of the head is correspondingly warmer or grayer brown but is not so strongly rufescent as in *nobilis* and some other forms.

The French and Dutch Guianan specimens are rather more heavily marked above and more sharply striped below than most of the Amazonian ones, but they agree fairly well in these particulars with Amazonian extremes and have the bill also of the same general size and shape, though at the maximum for this series. It seems best, therefore, to refer the Amazonian birds to typical *maculatus*.

I have no specimens of this form from the Tapajoz nor any locality farther east. It has been recorded from the Pará district and from Miritiba, Maranhão, but the possibilities are that it has reached this area across the islands in the mouth of the Amazon; it has been found, for example, on Mexiana and Caviana. On the other hand, I have skins from Villa Bella Imperatríz, both banks of the lower Rio Madeira, Teffé, localities on both sides of the Amazon in Perú, and Ecuador. Furthermore, I can find no records from the Tapajoz, Xingú, or Tocantins valleys. The situation in this limited area is particularly interesting and is discussed in detail under *M. m. solitarius* on a later page.

There is a single record of "*audax*" from Iquitos, collected by Whitely.

Birds from British Guiana, Venezuela, Trinidad, and Tobago have been referred by numerous authors to *maculatus*, but in the series at hand they appear to be recognizably distinct, forming a subspecies which finds its strongest expression in the population of the island of Tobago. This form may be known as follows.

Myiodynastes maculatus tobagensis, new subspecies

TYPE from Mariah, Tobago Island. No. 496,463, American Museum of Natural History (Rothschild Collection). Adult male collected May 12, 1903, by E. André's collectors.

DIAGNOSIS.—Similar to *M. m. maculatus* of French and Dutch Guiana and the Amazonian region, but averaging whiter below, with less yellowish suffusion on the breast, sides, flanks, and under tail-coverts; pectoral and gular stripes broader, darker, and sharper; under tail-coverts averaging more heavily streaked; upper surface darker, with the dark centers broader and more dusky and the pale edges narrower and less conspicuous; wing and tail longer; bill longer and heavier; dark shaft-stripes of tail averaging broader.

RANGE.—Tobago, Trinidad, the northern coast of Venezuela west to northern Anzoategui, southeastward across the Orinoco Delta into British Guiana.

DESCRIPTION OF TYPE.—Crown with margins of the feathers Brussels Brown and with shaft-stripes of blackish; this pattern restricted to the distal part of the

feathers, the basal portion of which is Lemon Chrome, tinged with cadmium centrally and passing into whitish laterally, forming a concealed patch; forehead buffy whitish streaked with brown; mantle with centers of feathers very broadly dusky brown, edged with brownish buff; hind neck slightly warmer, passing into the color of the tips of the crown-feathers; uropygium with margins of the feathers brighter, passing into Cinnamon-Rufous on the smaller upper tail-coverts and dark Sanford's Brown on the longer ones, with the dark central stripes progressively narrower. A moderately conspicuous superciliary stripe pale Cream-Buff, streaked with brown, passing narrowly over the lores and connecting with the pale forehead; lores blackish; auriculars dusky brown with whitish bases; a broad malar stripe of buffy whitish, reaching to the base of the bill, separated from the throat by a narrower stripe of dark brown, somewhat more blackish on the shafts of the feathers; throat white, rather conspicuously streaked with dark brown; breast and sides similar, with streaks much broader; flanks lightly tinged with pale yellow and with streaks somewhat duller but still prominent; middle of belly white; under tail-coverts Marguerite Yellow, strongly striped with light brown. Wings dull fuscous brown, with outer margins of the primaries light Auburn; outer margins of secondaries light buff, broader on the inner feathers and much broader and whiter on the tertials; greater upper wing-coverts with outer feathers margined exteriorly with Cinnamon-Rufous, the succeeding feathers with some buff toward the tips, and the inner ones with the outer margins yellowish buff; median coverts somewhat similar but with less buff at the tips of the feathers; lesser coverts with the outer feathers margined with cinnamomeous, the inner feathers grading into the color of the mantle; under wing-coverts Barium Yellow with some narrow, dark streaks except along the carpal border where the streaks are very broad, leaving only a narrow border of yellow; axillars Barium Yellow, with conspicuous brown shaft-streaks; inner margins of remiges pale yellow on the secondaries, tinged with orange-buff on the primaries. Tail with broad shaft-stripes of sooty black and with inner margins dark Sanford's Brown × Auburn, about half the width of the outer web on the median quills and about six-tenths of the width of the outer pair; outer margins of rectrices broadly rufescent except on outer pair where the margin is inconspicuously buffy. Maxilla and distal third of mandible (in dried skin) blackish; basal portion of mandible dull flesh-color; feet dusky brown. Wing, 109 mm.; tail, 84.5; exposed culmen, 24; culmen from base, 29.5; tarsus, 20.5.

Remarks.—Female similar to the male in color but averaging smaller. Wing, 102–110.25 (♂, 104.5–115); tail, 81–89 (♂, 81–93).

This form also is not perfectly uniform. It reaches its best development on the island of Tobago, for which reason Tobago was chosen as type locality. Trinidad birds are nearly as well marked and some of the specimens from the mainland are characteristic, but there is a tendency toward other forms exhibited by various specimens which increases as the ranges of these forms are approached (cf. account of *M. m. difficilis*). On the other hand, a specimen from Sacupana, at the mouth of the Orinoco, is well-marked *tobagensis* as are two skins from British Guiana; two other British Guiana birds are not so well marked but are not ref-

erable to typical *maculatus* and evidently represent no more than a light extreme of the Tobago form.

This form, of the various forms usually considered as subspecies of *maculatus*, approaches *solitarius* most closely, although it does not intergrade or hybridize with it. Certain abraded specimens show this resemblance the best. It is due to the heavy striping on the under parts, including the throat, and the heavy dorsal markings with narrow, pale borders which produce an effect of linear stripes of broad blackish and narrower whitish color. The relatively broad central stripes of the rectrices also show a certain approach in the direction of *solitarius* although that form, in a pure state, is definitely at a greater extreme than *tobagensis* in its maximum development of this nature.

So far as I can learn, *tobagensis* is resident where found.

Myiodynastes maculatus difficilis, new subspecies

TYPE from Bebedero, Costa Rica. No. 390,975, American Museum of Natural History. Adult male collected February 25, 1922, by Austin Paul Smith.

DIAGNOSIS.—Similar to *M. m. nobilis* of the Santa Marta region of northern Colombia, but pectoral striping heavier and more sharply defined; possibly a slightly stronger tinge of yellow on the under parts; throat and under wing-coverts averaging more strongly streaked. Coloration most like that of *M. m. maculatus* of French and Dutch Guiana and the Amazonian region but averaging warmer on head and back; bill notably heavier.

RANGE.—Western Costa Rica, Panamá, and most of Colombia (excepting the Santa Marta region and the extreme northern coast near the mouth of the Río Magdalena); apparently eastward to Mérida, Carabobo, and the middle Orinoco, Venezuela.

DESCRIPTION OF TYPE.—Top of head with blackish shaft-streaks and Sudan Brown margins; forehead and a narrow superciliary stripe more buffy and more narrowly streaked; center of crown with a concealed patch of Light Cadmium, turning to whitish on the bases of the lateral and posterior feathers; hind neck Sudan Brown with relatively strong, dark shaft-stripes; back with broad, but not sharply defined, central spots of dusky brown, blacker at the shafts, margined with a paler hue which is near Isabella Color on the upper mantle and pales to light Buffy Olive on the rump; upper tail-coverts Cinnamon-Rufous × Sanford's Brown with blackish shaft-stripes, broadest on the anterior feathers. Lores sooty blackish; auriculars dusky brown; a broad malar stripe of yellowish white, bordered below by a second stripe of buffy brown with darker shaft-stripes; chin and throat white, with prominent shaft-streaks of dark brown, broadest on the lateral feathers; breast and sides washed with Citron Yellow and broadly striped with Olive-Brown, these stripes continued a little more narrowly but less sharply-defined along the flanks and still more narrowly over the sides and upper part of the belly; a relatively small area in the center of the lower belly immaculate and with a fainter tinge of yellow; under tail-coverts light Primrose Yellow, prominently streaked with brown along the shafts.

Wings Hair Brown; primaries, except outermost, narrowly margined with light Brussels Brown; secondaries with outer margins Light Brownish Olive, paler and more buffy toward the tips and becoming generally whiter and broader on the innermost secondaries and on the tertials; median and greater upper wing-coverts with outer feathers margined exteriorly with bright Cinnamon-Rufous which becomes duller and more buffy on the middle feathers and more whitish on the inner ones; lesser series edged with deeper cinnamon; under wing-coverts and axillars Citron Yellow with brown shaft-streaks, broader along the carpal margin; a small grayish brown area with cinnamomeous-edged feathers near the base of the primaries; inner margins of remiges dull buffy yellow. Tail dark Hazel, with moderately broad shaft-stripes of blackish. Bill (in dried skin) blackish brown on maxilla and tip of mandible; remainder of mandible dull whitish; feet dusky brown. Wing, 111 mm.; tail, 89; exposed culmen, 24; culmen from base, 28.5; tarsus, 20.

REMARKS.—Female similar to the male.

A very few Santa Martan birds may be matched with the most lightly streaked examples of *difficilis* but none of them is as heavily marked as the average *difficilis* nor is any specimen of *difficilis* at hand as lightly marked as the average *nobilis*. Taken in series, the differences are quite evident and most of the specimens individually are equally recognizable.

The bill of *difficilis* is distinctly larger than that of *maculatus*. In *maculatus*, the culmen from base measures 24–27 mm., average, 25.5; the width of bill at anterior end of nostrils is 8–11 (one specimen at each extreme, the remainder 9–10), average 9.5. In *difficilis*, the culmen from base is 25.5–30.5, average, 27.3; width of bill at anterior end of nostrils, 10–12.75 (one specimen at each extreme, the remainder are 10.5–12.5, mostly 11–12), average, 11.4. In *maculatus* the bill is more evenly tapered from base to near tip, but in *difficilis* there is greater width continued in front of the nostrils, with more abrupt narrowing near the tip. This large, heavy bill is found in most of the forms of the species, but not in *maculatus*.

Specimens from the middle area of the Orinoco, the Mérida region, and the state of Carabobo, Venezuela, are referred here with some hesitation. They are not quite typical. The upper parts are about equally warmly colored but the pectoral markings are not quite so bold though they may be matched in some of the Colombian and other specimens. The bill, furthermore, is at the minimum of size, although it is rather larger than in the Amazonian *maculatus*. Although not very sharply defined, the pectoral stripes are broader than in *nobilis* and association does not appear to be with that form. The relationship appears to be correlated rather exactly with the geographical position of the region, where the ranges of *maculatus*, *tobagensis*, *difficilis*, and possibly *nobilis* are most nearly centered in common.

Myiodynastes maculatus chapmani, new subspecies

TYPE from Esmeraldas, western Ecuador. No. 118,753, American Museum of Natural History. Adult male collected November 23, 1912, by William B. Richardson.

DIAGNOSIS.—Nearest to *M. m. difficilis* of Costa Rica, Panamá, and central Colombia, but differing from it (as also from all other forms of the species) by the unusually broad and clear superciliary stripe most of which is unstreaked; pectoral stripes a little heavier than in *difficilis*.

RANGE.—Extreme western Ecuador and probably the coast of northwestern Perú.

DESCRIPTION OF TYPE.—Crown with blackish central streaks and Brussels Brown margins at the tips of the feathers, concealing a basal patch of Lemon Chrome in the center of the area; forehead rather broadly Cream Color with inconspicuously darker shaft-streaks; this pale area continued rather broadly over the lores and broadening still further over the orbits and auriculars where it is more whitish (Ivory Yellow), unstreaked except in a narrow line over the auriculars, and noticeably white subbasally; mantle with broad, dusky brown centers, edged with light brown or buff (light Buckthorn Brown to Naples Yellow); upper tail-coverts rufescent (bright Hazel), with somewhat buffy margins and broad central stripes of dusky on the upper feathers, clearer rufous margins and narrow shaft-streaks on the longer ones. Lores blackish; auriculars dark brown; a broad malar stripe of buffy whitish, bordered below by a narrower stripe of dark brown, passing into whitish anteriorly; chin and throat white, streaked with dark brown on the shafts, narrowly in the center, more broadly laterally; breast whitish, tinged with pale yellow and with moderately heavy shaft-streaks of dark brown, somewhat broader on the sides; flanks Reed Yellow, with narrow, dull shaft-streaks of brown, much less conspicuous than the pectoral markings; under tail-coverts Reed Yellow with hair-like shaft-streaks of brown. Wings dark Hair Brown; outer margins of primaries on basal half near Sayal Brown; outer margins of outer secondaries basally Saccardo's Umber, paler distally and more whitish toward tips; on inner secondaries and tertials the margins are broader and slightly yellowish white; upper wing-coverts with strong outer margins which are light cinnamomeous on the outer feathers, becoming whitish on the inner feathers of the greater and median series; under wing-coverts and axillars Barium Yellow with fine, brownish shaft-streaks, broader toward the carpal margin of the wing; inner margins of secondaries pale, dull yellow; inner margins of primaries tinged with buff. Tail Cinnamon Rufous × Sanford's Brown with broad, blackish shaft-stripes occupying less than half of the inner web of the median pair and about one-fifth of the inner web on the outer pair, proportionately narrower on the outer webs of the various rectrices except the outermost where the rufous outer margin is only poorly defined. Bill (in dried skin) with maxilla and tip of mandible blackish; remainder of maxilla dull whitish; feet blackish. Wing, 108 mm.; tail, 83; exposed culmen, 24; culmen from base, 29.5; tarsus, 19.

REMARKS.—Female similar to the male; not certainly different in size or color.

I am unable to find any specimens in the large series of the *maculatus* group now available, except those from the western coastal region of

Ecuador, which exhibit such a prominent superciliary stripe as forms the principal diagnostic character of *chapmani*. In *solitarius* the stripe is prominent but part of the effect is due to the blackness of the surrounding parts against which the white stripe stands in contrast. All of the forms of *maculatus* have a superciliary stripe of sorts but it is always relatively narrow and often obscured by the prominence of the shaft-streaks on the individual component feathers. In *chapmani* the stripe may be four or five millimeters in width, without streaking. In young birds the superciliary is usually as prominent as in the adults but one specimen from the coast of Manaví is very like some *maculatus* in corresponding plumage.

The single record of "*nobilis*" from Lechugal, Perú, undoubtedly belongs to *chapmani*.

I take great pleasure in naming this form for Dr. Frank M. Chapman who needs no introduction to students of South American birds.

Myiodynastes maculatus solitarius (Vieillot)

Tyrannus solitarius VIEILLOT, 1819, 'Nouv. Dict. Hist. Nat.,' nouv. éd., XXXV, p. 88—based on AZARA, No. 196; Paraguay.

Myiodynastes solitarius duncani CHUBB, 1919, Bull. Brit. Orn. Club, XL, p. 62—Supenaam, British Guiana; British Mus.

It is rather difficult to find complete evidence on the dates of occurrence of *solitarius* in various localities, but such data as are available indicate that this bird is found only as a migrant on the Amazon and in all areas north of that stream. The series of over sixty specimens at hand from the Amazon and northward is dated from March 25 to September 16 (except for two specimens dated in November and December but which are of much earlier origin, judging by the condition of molt, described hereafter). Wetmore (1926, Bull. U. S. Nat. Mus., No. 133, p. 332) records the arrival of this bird in Paraguay on September 20; no data are given as to possible dates of departure from the south. Nevertheless, an average nesting season would allow the birds until February or March to leave their breeding range in the southern countries and to form, thereby, the necessary missing link in the yearly complement of dates.

The breeding range in Brazil appears to embrace suitable localities from as far south as Rio Grande do Sul, north along the coastal series of states to Piauhy, and west through Goyaz to Matto Grosso. Maranhão specimens at hand are dated October, April, and May, and Hellmayr records others dated September and June. In this state, therefore,

the bird is evidently a winter resident or visitor, but it is uncertain that it breeds there. Our Piauhy skins are June birds while Hellmayr records December, which indicate the presence of the bird in that state both in the breeding and winter seasons. We have June birds from Bahia which must, therefore, be included in the winter range as well as the breeding area. Pinto's records from southern Goyaz include only August, October, and November. All birds that I have seen from Minas Geraës and Matto Grosso, Brazil, eastern Bolivia, and all areas south of this, including Uruguay, Paraguay and northern Argentina are dated from August to April, most of them from September to March. There is thus a considerable region from which *solitarius* may migrate after its breeding season. A record by Natterer from Ypanemá in June conflicts with this suggestion, although Natterer states that the bird is not found in Rio de Janeiro in winter.

Nowhere does the breeding range appear to touch that of the Amazonian *maculatus;* at least such contact is not demonstrable in the material examined. Nevertheless, a series of seven birds, six from the right bank of the lower Xingú and one from Villa Bella Imperatríz, are intermediate between these two forms. These birds are dated March, August, and September and possibly are migrants from some other locality to the southward. Twenty-two skins from both banks of the Tapajoz, dated March, April, May, June, and July, are typical *solitarius* as are four birds from the lower Madeira and all other specimens from the winter range of this form.

As mentioned in the discussion of *maculatus*, there are no records of the Amazonian form from the Tapajoz, Xingú, or Tocantins, and it is possible that *solitarius* replaces it as a resident and breeder in this area, but the dates of our material are all between those of departure and rearrival in the more southern breeding areas, suggesting that *solitarius* reaches the Amazon only as a winter visitor. The origin of the intermediate specimens is, therefore, impossible to determine with the material now available.

We have one specimen of *solitarius* said to have been collected on the lower Tocantins (Baião) in November, but the specimen is still in the concluding stages of molt which our extensive series from other localities show in a similar stage in June and July. The date and locality are, therefore, to be questioned since the collector of this bird was not on the Tocantins in June or July. A similar error is evident in a specimen from the lower Napo, Ecuador, said to have been taken in December although the plumage indicates June as the probable date. The re-

mainder of the series, including another eastern Ecuadorian specimen, appear to be consistently regular. There is no positive evidence, therefore, that *solitarius* breeds in the Pará region or in southeastern Ecuador.

The intermediate specimens from the Xingú are not uniform in all particulars, showing more individual variation than typical *solitarius* but about the same amount as *maculatus*. The upper parts are dark without being as blackish as in *solitarius*, although several specimens have much the same kind of linear, olive-whitish edging on the back; others are near the pattern of *maculatus*. The throat averages more heavily streaked than in *maculatus*, less heavily than in *solitarius*. The rest of the under parts are whitish suffused with yellow on breast and flanks and with yellowish under tail-coverts; the center of the belly is unstreaked as in *maculatus;* the pectoral striping is more pronounced than in most *maculatus* but not so heavy as in *solitarius*. The tail shows various degrees of intermediacy. It is not like typical *solitarius* in any of the intermediate birds. One example has this appendage of the same color and pattern as in *maculatus;* two specimens have the same pattern, but the rufous hue is deeper; three have the blackish shaft-stripe widened so as to occupy more than half of the inner webs on all of the feathers. In *maculatus* this shaft-stripe frequently occupies more than half of the width of the inner web on the middle rectrices, but, apparently, never so on the outer feathers. In *solitarius* there is frequently a very narrow rufous inner margin on the rectrices, wider toward the tip and wider in young birds, but it does not reach the development shown by the intermediate skins under discussion.

The intermediates have the bill of the size shown by *maculatus* and both larger and smaller (culmen from base, 23–28 mm.), as does *solitarius*, and the pattern of the wing, with very fine, dark rufescent margins on the primaries, etc., in better agreement with *solitarius* than with *maculatus*. When the series is placed between one of *solitarius* and one of *maculatus*, the intermediate nature of these birds is apparent at a glance.

Sclater (1888, 'Cat. Birds Brit, Mus.,' XIV, p. 186) notes that intermediates occurred between *solitarius* and "*audax*" which were very difficult to arrange satisfactorily under either form and suggested that the relationship was probably a subspecific one. Hellmayr (1927, Field Mus. Nat. Hist. Publ., Zool. Ser., XIII, Pt. 5, p. 127, footnote a) considered this suggestion unfavorably since he had never seen intermediates. In the light of the present evidence I have adopted Sclater's proposal even though the exact origin of the intermediate birds may be still undetermined.

Records of *solitarius* from Perú are from Huaynapata, Garita del Sol, La Gloria, La Merced, Borgoña, Tarapoto, Monterico, Chayavitas, Jeberos, Yurimaguas, Chirimoto, Moyobamba, Chamicuros, Pebas, and an unspecified region of hot forests and plantations (presumably the Chanchamayo Valley). Others are given below in the list of material examined.

Dates are not available for all of these records. All recorded dates from northern Perú are in March, April, June, July, and August. Nevertheless, Bartlett (in Sclater and Salvin, 1873, P. Z. S. London, p. 280) notes that he obtained one egg of this bird. Presumably this was from Yurimaguas, Jeberos, Chayavitas, or Chamicuros, but Bartlett does not specify locality or date. His skins from these localities were dispersed and are not available for examination. Consequently I have no confirmation of his record and no data from northern Perú to substantiate it. Further information on this point is much to be desired.

The case is otherwise in central and southeastern Perú. I collected a male and a young female on the Río Colorado, Chanchamayo Valley, in February and January, respectively. There is a specimen from Perené, collected in October, and a record from Garita del Sol, also October. Specimens from southeastern Perú are dated September and October. The January and February occurrence indicates the breeding of *solitarius* in this part of the country and a specimen from Tulumayo, taken in May, suggests that the residence here is permanent, although it is not impossible that the breeding and "wintering" populations are different.

There are no records of *maculatus* from central or southeastern Perú nor, for that matter, from anywhere in the Huallaga Valley or westward. Hence, even if *solitarius* should be found to breed in this area, it would not be proof of any conflict in the ranges of these two forms. The Ucayali specimens of *solitarius* were taken in March, April, and July, and are non-breeding birds; hence the occurrence of *maculatus* on the Ucayali at the same time does not imply a significant conflict in distribution.

Specimens Examined

M. m. maculatus.—French Guiana: Cayenne, 4 ♂, 1 ♀; "Cayenne" (trade-skins), 2 (?). Dutch Guiana: Paramaribo, 1 ♂, 3 ♀. Brazil: Monte Alegre, 1 ♂; Faro, 1 ♂; Rio Negro, Igarapé Cacao Pereira, 2 ♂; Rio Madeira, Borba, 1 ♂; Igarapé Auará, 3 ♂, 2 ♀; Rosarinho, 5 ♂, 7 ♀; Santo Antonio de Guajará, 2 ♂, 1 ♀; Villa Bella Imperatríz, 2 ♂, 1 ♀. Ecuador: mouth of Río Curaray, 1 ♂, 4 ♀. Perú: Anayacu, 1 ♀; Sarayacu, 1 ♂, 3 ♀; mouth of Río Urubamba, 1 ♀.

M. m. tobagensis.—TOBAGO: Mariah, 2 ♂ (incl. type); Castare, 3 ♂; Englishman's Bay, 1 ♀; "Tobago," 1 ♂. TRINIDAD: Princestown, 3 ♂, 1 ♀; heights of Aripo, 2 ♀; Caparo, 4 ♂, 4 ♀; Valencia, 1 ♀; Pointe Gourde, 1 ♀; "Trinidad," 1 (?). VENEZUELA: Cristóbal Colón, 2 ♂, 2 ♀, 1 (?); Puerto La Cruz, 1 ♂; El Pilar, 1 (?); San Antonio, Bermúdez, 1 ♂; Rincon San Antonio, 2 ♂; San Estéban, 1 ♀; Las Quiguas, 1 ♂; Sal si Puede, 2 ♂, 1 ♀; Quebrada Secca, 1 ♂; Plain of Cumaná, 1 ♂; Santa Ana Valley, 1 ♂; Cumanacoa, 1 ♀; Yacua, Gulf of Paria, 1 (?); Sacupana, 1 (?). BRITISH GUIANA: Annai, 1 ♀; Essequibo River, 1 (?); Rupuruni River, 1 ♂, 1 ♀.

M. m. nobilis.—COLOMBIA: Santa Marta, Minca, 3 ♂, 1 (?); Bonda, 4 ♂, 6 ♀, 6 (?); Cacagualito, 4 ♂; "Sta. Martha," 3 ♂; Río Magdalena, Calamar, 1 ♂; Puerto Berrio, 1 ♂, 1 ♀.

M. m. difficilis.—COSTA RICA: Bebedero, 2 ♂ (incl. type), 1 ♀; Miravalles, 3 ♂, 1 ♀; Pigres, 1 ♂; El Pozo, 1 ♀; San José, 1 ♂. PANAMÁ: Santa Fé, Veraguas, 7 ♂, 6 ♀; Wilcox Camp, 1 ♂; El Villano, 1 ♂; Agua Dulce, Coclé, 1 ♂; La Colorado, Santiago, 1 ♂, 2 ♀; Cape Mala Peninsula, 1 ♂; Boqueron, Chiriquí, 2 ♂; Bogava, 1 ♀; Río Capeti, 1 ♂, 1 ♀; Savanna near Panamá, 1 ♂; Tocumé, 1 ♂, 3 ♀; Chepigana, 1 ♂; El Real, Río Tuyra, 1 ♂, 3 ♀; Tarcarcuna, 1 ♀; Coiba Island, 3 ♂, 1 ♀; Pearl Islands, Pedro Gonzalez, 1 ♂, 5 ♀; Pearl Islands, Pacheco, 1 ♀; [Lion Hill ?], 1 ♂, 1 ♀. COLOMBIA: Palmira, 2 ♂; Alto Bonito, 2 ♂; Puerto Valdivia, 2 ♀; Chicoral, 2 ♀; Malena, 1 ♂; Dabeiba, 1 ♂; San Isidro, 1 ♀; Río Caquetá, 1 ♀. VENEZUELA: Tachira, Ortiza, 1 ♂, 1 ♀; Mérida, Escorial, 1 ♂; Ejido, 1 (?); Carabobo, Las Trincheras, 2 ♂; Quiribana de Caicara, 3 ♂, 1 ♀; Caicara, 2 ♂; Ciudad Bolívar, 1 ♀; Suapure, 1 ♀.

M. m. insolens.—MEXICO: Jalapa, 1 ♂; Yucatan, 1 ♂, 1 (?). GUATEMALA: Finca Chamá, 3 ♂, 1 ♀; "Guatemala" (trade-skins) 3 (?).

M. m. chapmani.—ECUADOR: Esmeraldas, 4 ♂ (incl. type), 3 ♀; coast of Manaví, 1 ♀, 2 (?); Chone, 2 ♀; Daule, 1 ♂, 1 (?); Paramba, 1 ♂; Carondelet, 1 ♂; San Javier, 1 ♀; Santa Rosa, 1 ♂, 2 ♀.

M. m. solitarius.—ARGENTINA: La Soledad, 1 ♂; Tucumán, 2 ♂, 1 ♀; Perico, Jujuy, 1 ♂; Embarcación, Salta, 6 ♂, 3 ♀; Santa Ana, Misiones, 1 ♀; Isla Martin Garcia, Rio de la Plata, 1 ♂; El Carrizal, 1 ♀[1]; Río Paraná. Misiones, 1 ♂[1]. URUGUAY: Quebrado de los Cuervos, 4 ♂[1], 1 ♀[1]. PARAGUAY: Colonia Risso, 1 ♀, 1 (?); east of Caaguazú, 2 ♂, 3 ♀; east of Yhú, 1 ♀; east of Villa Rica, 3 ♂; Abai, 1 ♂; Asco, 1 ♂. BRAZIL: Matto Grosso, Chapada, 2 ♂, 3 ♀; Urucum, 2 ♂, 1 ♀; Rio Grande do Sul, Nonohay, 1 ♂, 3 ♀, 5 (?); Lagõa Vermelha, 3 ♂; Lagõa de Forno, 2 ♂; Sinimbú, 1 ♂; Sananduva, 1 ♂, 2 ♀; São Francisco de Paula, 4 ♂, 1 ♀; Santa Catharina, Palmitas, 1 (?); Paraná, Roca Nova, 3 ♂, 1 ♀; Tibagy, 1 ♀; Curytiba, 1 ♂; Corvo, 2 ♂; Porto Almeida, 2 ♂; São Paulo, Alambary, 2 ♂; Fazenda Cayoá, 2 ♂; "Rio," 2 (?); Monte Serrat, Itatiaya, 1 ♀; Minas Geraës, Pirapora, 1 (?); Bahia, Bahia, 1 ♂, 1 ♀; Santa Ritta, 1 ♂; Orobó, 1 ♂; Jiquy, 3 ♂; Cajazeiras, 1 ♂; "Bahia" (trade-skin), 1 (?); Pernambuco, Rio Branco, 1 ♀; Bello Jardim, 1 ♀; Ceará, Joazeiro, 1 ♂; Piauhy, Parnaguá, 1 ♂; Corrente, 1 ♀; Maranhão, Flores, 1 ♂; As Mangueras, 1 ♂; Itapaca, 1 ♂; Ilha São Luiz, 1 ♂; "Brazil," 1 (?); "S. Brazil," 1 (?); Pará, Benevides, 1 ♂; Utinga, 1 ♂; Rio Tapajoz, Aramanay, 5 ♂, 1 ♀, 1 (?); Igarapé Brabo, 5 ♂, 4 ♀; Caxiricatuba, 1 ♀; Tauarý,

[1] Specimens in Field Museum of Natural History, Chicago.

1 ♂, 1 ♀; Igarapé Amorin, 1 ♂; Santarem, 1 ♂, 1 (?); Rio Madeira, Igarapé Auará, 1 ♂; Rosarinho, 2 ♂, 1 ♀; Rio Amazonas, Teffé, 3 ♂, 1 ♀; Rio Negro, Manaos, 2 ♀; Tatú, 1 ♂; Rio Uaupés, Ianarete, 1 ♂, 1 ♀; Tahuapunto, 1 ♂; Rio Surumú, Frechal, 1 ♀. BRITISH GUIANA: Rupuruni River, 1 ♀; Supenaam, 1 (?). VENEZUELA: Río Cassiquiare, Solano, 2 ♂, 1 ♀; Río Huaynia, junction of Cassiquiare, 2 ♀; San Antonio, Bermúdez, 1 (?). COLOMBIA: "Bogotá" (trade-skin), 1 (?). ECUADOR: "Napo," 1 (?); Río Suno, above Avila, 1 ♂. PERÚ: Pozuzo, 1 (?); Tulumayo, 1 ♂; Perené, 1 ♂; La Pampa, 1 ♂; Río Tavara, 1 ♀; Pomará, 1 ♂; Río Seco, 4 ♂, 1 ♀; Sarayacu, 3 ♀; "Perú," 2 (?); Río Colorado, 1 ♂[1], 1 ♀[1]; Vista Alegre, 1 ♂[1]. BOLIVIA: Province of Sara, 4 ♂, 1 ♀; Monos, 1 ♂; Buenavista, Santa Cruz, 2 ♂[1].

M. m. solitarius × *maculatus*.—BRAZIL: Rio Xingú, Porto de Moz, 1 ♂, 1 ♀; Tapará, 2 ♂, 2 ♀; Rio Amazonas, Villa Bella Imperatríz, Santa Clara, 1 ♀.

Conopias cinchoneti cinchoneti (Tschudi)

T(yrannus) Cinchoneti TSCHUDI, 1844 (May), Arch. Naturg., X (1), p. 272—Perú = highlands of Junín; Berlin Mus.

There is just enough difference observable between Peruvian and Colombian specimens to reopen the question of recognition of *icterophrys* [*T(yrannula) icterophrys* LAFRESNAYE, 1845, Rev. Zool., VIII, p. 341—Bogotá]. Peruvian birds have the forehead broadly yellow, back to the anterior border of the orbits, whereas Colombian specimens examined have this pale band narrower and decidedly duller, with the single exception of a "Bogotá" skin which at first glance appears to agree with the Peruvian birds. However, this specimen has lost many of the frontal feathers and the anterior plumes of the yellow superciliary stripe appear to be continuous with the yellow bases of the anterior, central feathers of the crown and to give a false impression of a broader band than actually exists. Although this specimen may show the maximum amount of yellow on the forehead for a Colombian specimen, I believe that it is still to be associated with the other Colombian specimens. Also, there is an average difference in the length of the wing which should be significant. Colombian males at hand have the wing 79.5, 81, 82, 82.25, and 82.75 mm.; females 78.75 and 79. A Peruvian male measures 86.75; two females, 82 and 79 (right wing 79, left wing 76). Two Ecuadorian males agree with Peruvian specimens in regard to the wide frontal band and have the wing 84.75 (juvenal) and 88 mm., respectively. The type of *cinchoneti* (without given sex) is said by Hellmayr to have the wing 86.5 mm. Furthermore, Chapman (1921, Bull. U. S. Nat. Mus., No. 117, p. 96) remarks that a male of *cinchoneti* from Idma, Perú, was considerably larger than Colombian specimens, although he gives no measurements.

[1] Specimens in Field Museum of Natural History, Chicago.

It seems evident, therefore, that there is enough distinction here to warrant the recognition of *icterophrys* from Colombia and to restrict the range of *cinchoneti* to Perú and Ecuador.

Sclater (1888, 'Cat. Birds Brit. Mus.,' XIV, p. 173) was in error in stating that there is no yellow-head-spot in the genus *Conopias*. The males of the present species (except one from Río Lima, Colombia, and a young male from Baeza, Ecuador) have a small but distinct yellow patch on the anterior crown. It is rather pale in the Colombian males and poorly developed in the adult from Baeza, while in the Peruvian male the patch is quite extensive and deeper yellow than in the other birds. The patch is lacking in all the females.

The same condition prevails to a lesser extent in the allied *C. trivirgata*. Various males of both the typical form and *C. t. berlepschi* have small but noticeable yellow crown-patches; the females do not.

It may be remarked here that *berlepschi* has a very much wider range than has been suspected. We have material from Faro, both banks of the lower Rio Negro (Hacienda Rio Negro and Igarapé Cacao Pereira), the Río Tapajoz (Igarapé Amorin, Caxiricatuba, and Tauarý), the Rio Madeira (Borba, Igarapé Auará, and Rosarinho), Villa Bella Imperatríz, and Teffé.

The young male of *c. cinchoneti* from Baeza, Ecuador, has fine, whitish tips on the crown and nape, similar but duller pale tips on the middle of the back and posteriorly, increasing in width posteriad and becoming brownish buff on the upper tail-coverts. The upper wing-coverts also are tipped with brownish buff and there are narrow pale margins completely encircling each of the rectrices. The pale outer margins of the secondaries are paler and sharper than in the adults.

Curiously, Sclater (1888, t. c., p. 41) included a reference to Tschudi's description under "*Sisopygis*" (=*Satrapa*) *icterophrys* and on that basis recorded that species from Perú, quite erroneously. The reference to Tschudi is repeated under its proper heading on a later page (p. 174).

Specimens Examined

C. c. cinchoneti.—Perú: Tulumayo, 1 ♂; Pozuzo, 1 ♀; Río Seco, west of Moyobamba, 1 ♀. Ecuador: Baeza, 2 ♂.

C. c. icterophrys.—Colombia: Río Lima, 2 ♂, 1 ♀; Aguadita, 1 ♂; La Frijolera, 2 ♂; east of Palmira, 1 ♀; "Bogotá," 1 (♂ ?).

Myiozetetes similis similis (Spix)

Muscicapa similis Spix, 1825, 'Av. Bras.,' II, p. 18—part; "Fl. Amazonum"; Munich Mus.

M(yiozetetes) similis connivens BERLEPSCH AND STOLZMANN, 1906, Ornis, XIII, p. 87 (in text)—Santa Ana, Urubamba, Perú; ♂; Warsaw Mus.

An extensive series of birds from the Amazon and another from various localities in eastern and southeastern Brazil show quite clear distinctions that indicate the previous misapplication of Spix's name, *similis*. The southeast-Brazilian birds all have a definite brownish hue of olive on the upper parts, whereas the Amazonian specimens are greener. The outer margins of the remiges average a little stronger rufous and the throat and superciliary region a little clearer white, but there is too much individual variation to make these features as definitive as the color of the back. Old and faded specimens from the Amazonian region are rather browner than fresh ones and approach the fresher examples of the southeast-Brazilian series, but when fresh examples from both regions are compared, the difference is quite apparent.

Hellmayr [1906, Abh. K. Bayer. Akad. Wiss., 2 Kl., XXII (3), p. 649] noted that the cotype of Spix's *similis* which belongs to the present group (the other belongs to *M. cayanensis*) and to which he (*l. c.*) restricted the name, was badly soiled. It is very probable that, due to this fact and to the age of the skin, exact determination at the present time would be impossible and the geographic position of the type locality would, therefore, be of major importance. In assigning it to the subspecies which included east-Brazilian examples, Hellmayr included also specimens from the Rio Madeira and eastern Perú. The Peruvian skins have since been assigned to the form described as *connivens*. Careful comparison of the series of Amazonian birds now at hand with other specimens from Perú reveals the fact that the Amazonian series also must be referred to the east-Peruvian subspecies. Accepting Spix's citation of the Amazon River as type region, *connivens* must fall as a synonym of *similis*. For greater accuracy, I propose the mouth of the Rio Madeira as restricted type locality, visited by Spix October 15, 1819. The southeast-Brazilian form must then be known as *M. s. pallidiventris* PINTO (1935, Rev. Mus. Paulista, XIX, p. 212—Reconcava, Bahia).

The range of typical *similis* thus may be considered to involve both banks of the Amazon from the Tapajoz, on the south bank, and Monte Alegre, on the north bank, west to Perú (east of the western Andes), eastern Ecuador, and eastern Colombia, south to northern Bolivia, east (in the north) to the upper reaches of the Orinoco in Venezuela, including at least the western foot of Mount Duida (Río Cunucunumá). The range ascends the Rio Negro from Manáos at least as far as Tauapessasu, but I have no specimens to indicate that it follows up the Negro to the

Cassiquiare and across to join the area near Mt. Duida, as it might be expected to do. I have only the congeneric *M. cayennensis* from the upper Negro, the Cassiquiare, and Mt. Duida itself.

Similarly, I have only one specimen of *similis* from the lower Tapajoz (Igarapé Brabo, left bank), none from the Xingú, and none from the Tocantins. Records from Pará may well belong to *pallidiventris*.

Records from Perú which belong to typical *similis* are from Yurimaguas, Iquitos, Bellavista, Chanchamayo, Santa Ana, Huiro, Cosñipata, Monterico, Upper Ucayali [= Cashiboya], Lower Ucayali, and La Merced. Additional records are from some of the localities from which material has been examined.

Some of the specimens from the westernmost localities in the range of *similis* approach *grandis* in the depth of the yellow ventral color but otherwise are easily referable to *similis*.

Myiozetetes similis grandis Lawrence

Myiozetetes grandis Lawrence, 1871 (Dec. 5), Proc. Acad. Nat. Sci. Phila., p. 234—Prov. Tumbez, Perú; Vassar College.

Myiozetetes similis pacificus Chapman, 1924 (Oct. 18), Amer. Mus. Novit., No. 138, p. 2—Santa Rosa, Prov. del Oro, Ecuador; ♂; American Museum of Natural History.

This western form has the under parts the most deeply yellow of all the conspecies and the throat and superciliary stripes the most strongly tinged with yellow. The pale wing-bars are relatively well developed, being stronger than in *similis* but weaker than in the maximum of *columbianus* which it most nearly resembles. Its average size is larger than either *columbianus* or *similis* although there is some overlap.

The form is relatively limited in distribution, being found only in western Ecuador and extreme northwestern Perú. Aside from the type from the Province of Tumbez and the specimens listed below, there are no other Peruvian records.

I am unable to adopt Nelson's and Peters's usage of "*Tyrannus superciliosus* Bonaparte" for the east-Mexican and northern Central American subspecies, to supplant *Muscicapa texensis* Giraud (cf. Nelson, 1900, Auk, XVII, p. 124; Peters, 1929, Bull. Mus. Comp. Zoöl., LXIX, p. 447). I believe it obvious that Bonaparte was merely misidentifying *Tyrannula superciliosa* Swainson as is indicated by his quoting "Swains." as authority for the name. That he continued so to misidentify it is evidenced by the fact that in the 'Consp. Gen. Av.,' I, p. 190, 1850, he places Spix's *Muscicapa similis* as a probable synonym of "*T(yrannula) superciliosa* Sw." His diagnosis of "*Tyrannus superciliosus*

Swains." is comparable to the diagnoses of various other species in the same paper ascribed to one author or another and not considered as new; the new forms are identifiable by the accompanying "Nob." The real *Tyrannula superciliosa* SWAINSON is *Conopias trivirgata* (WIED) which has enough points of general resemblance to a *Myiozetetes* to explain Bonaparte's error, especially when faulty descriptions and illustrations of that day are considered. Article 31 of the International Rules of Zoological Nomenclature appears to cover the case in its provision that names based on an error of identification cannot be retained for the misdetermined species.

SPECIMENS EXAMINED

M. s. similis.—BRAZIL: Rio Tapajoz, Igarapé Brabo, 1 ♀; Villa Bella Imperatríz, 5 ♂, 6 ♀; Rio Madeira, Borba, 4 ♂; Igarapé Auará, 2 ♂, 1 (?); Rosarinho, 9 ♂, 8 ♀; Santo Antonio de Guajará, 1 ♂, 3 ♀; Teffé, 14 ♂, 5 ♀; Rio Jamundá, Faro, 5 ♂, 8 ♀; Monte Alegre, 1 ♀; Rio Negro, Campos Salles, Manáos, 1 ♂, 3 ♀; Igarapé Cacao Pereira, 12 ♂, 7 ♀; Muirapinima, 2 ♂, 3 ♀; Tauapessasu, 1 ♂. BOLIVIA: Todos Santos, 1 ♀. PERÚ: Río Tavara, 2 ♂, 1 ♀; Astillero, 1 ♂; Idma, 1 ♂; Pozuzo, 1 ♀; Perené, 2 ♂, 3 ♀; mouth of Río Urubamba, 1 ♂, 1 ♀; Santa Rosa, 6 ♂, 5 ♀; Sarayacu, 1 ♀; Orosa, 1 ♂, 2 ♀; Puerto Indiana, 2 ♀; Anayacu, 3 ♂; Nauta, 1 ♂, 1 ♀; Perico 2 ♂, 1 ♀; San Ignacio, 3 ♂, 2 ♀; Rio Negro, west of Moyobamba, 1 ♀; Río Seco, 2 ♂; Jaen, 2 ♂, 1 ♀; Huarandosa, 1 ♂; Río Tapiche, 1 (?); Moyobamba, 6 ♂[1], 2 ♀[1]; Chinchao, 1 ♂[1], 2 ♀[1]; Vista Alegre, 2 ♂[1]. ECUADOR: Ambato, 1 (?); Zamora, 2 ♂; Río Suno, above Avila, 3 ♂, 1 ♀; mouth of Río Curaray, 3 ♂, 2 ♀; "Equateur," 1 (?). COLOMBIA: Villavicencio, 3 ♂; Buena Vista, 1 ♂; La Morelia, 1 ♂; "Bogotá," 2 (?). VENEZUELA: San Fernando, upper Orinoco, 1 ♂; mouth of Río Chanaro, Río Caura, 1 (?).

M. s. pallidiventris.—BRAZIL: (state of) Minas Geraës, 1 ♂, 1 ♀; Santa Catharina, 3 ♂, 1 ♀; Piauhy, 4 ♂, 1 ♀; Espirito Santo, 2 ♂, 2 ♀; Ceará, 1 ♂; Pernambuco, 2 ♂, 2 ♀; São Paulo, 1 ♂, 1 ♀; Rio de Janeiro, 1 ♂, 2 ♀, 1 (?); Bahia, 5 ♂, 4 ♀, 5 (?).

M. s. grandis.—PERÚ: Paletillas, 1 ♂, 1 ♀; Milagros, 1 ♂. ECUADOR: Santa Rosa, 3 ♂ (incl. type of *pacificus*), 1 ♀; Río Pindo, 1 ♂, 1 ♀; Cebollal, 2 ♀; Zaruma, 1 ♀; Esmeraldas, 2 ♂, 1 ♀; Casanga, 2 ♂; La Chonta, 1 ♂; Chone, 1 ♂; Río Pullango, 1 ♂; Alamor, 1 ♀.

M. s. columbianus.—VENEZUELA: Ciudad Bolívar, 2 ♂, 3 ♀; Agua Salada de Ciudad Bolívar, 2 ♂; Caicara, 1 ♂; San Fernando, Apure, 1 (?); Altagracia, 3 ♂, 3 ♀; (Orinoco trade-skin), 1 (?); Salsipuede, 2 ♂, 3 ♀; Campos Alegres, Cumaná, 3 ♂, 1 ♀; Santa Ana Valley, 1 ♂; Cumbre Chiquitos, 1 ♂; Plain of Cumaná, 1 ♀; Guiria, 1 (?); San Esteban, 1 (?); Puerto Cabello, 1 ♂, 1 ♀; Cristóbal Colón, 1 ♀; Las Trincheras, Carabobo, 3 ♂; Cumanacoa, 3 ♂; El Latal, 1 ♂; Cuchivano, 1 ♂; La Florida, Cumanacoa, 1 ♂; Cocallar, 1 ♂; El Pilar, Anzoategui, 1 ♂; Tucacas, Falcón, 1 ♂, 1 ♀; El Cuji, Lara, 1 ♂; Mérida, 1 ♂; Nevados, 1 ♂; El Valle, 7 ♂, 4 ♀, 2 (?). COLOMBIA: Andalucia, 1 ♂; Magdalena River, 1 ♀;

[1] Specimens in Field Museum of Natural History, Chicago.

Chicoral, 2 ♀; "Bogotá," 5 (?); Santa Marta, 3 ♂, 1 (?); Bonda, 3 ♂, 1 ♀, 2 (?); Minca, 1 ♂; Cacagualito, 1 ♂, 1 (?); Buritaca, 1 ♂. PANAMÁ: 19 ♂, 14 ♀, 3 (?) (incl. type of *marginatus*). COSTA RICA: Buenos Aires, 2 ♂; El Pozo, 3 ♂.

M. s. texensis.—COSTA RICA: San José, 1 ♂, 1 (?); Aquinares, 1 ♂, 1 ♀; Guapiles, 2 ♂; Ontario, 1 ♂; Las Cañas, 1 ♀; Carrillo, 1 ♀; Bebedero, 2 ♂; Miravalles, 1 ♀; Atalanta, 1 ♂; Aguas Calientes, 1 ♂, 1 (?). HONDURAS: Chamelicon, 1 (?). NICARAGUA: Matagalpa, 1 ♂; Corinto, 1 ♂, 1 ♀; Chinandega, 1 ♀; Vizagua or Río Tuma, 1 (?); Rio Grande, 1 ♂; Tipitapa, 1 ♂. GUATEMALA: 68 skins. MEXICO: [states of Vera Cruz, Jalapa, Tamaulipas, and Yucatan (Peninsula ?)]: 9 ♂; 10 ♀, 6 (?).

M. s. primulus.—MEXICO: Sinaloa, Escuinapa, 4 ♀; Jalisco, Tonila, 1 ♂; Ixtlan, 1 ♂; Guadalajara, 3 ♂, 1 (?); Chapada, 1 [♂], 1 (?); Tepic, Río Ameca, 1 ♀; San Blas, 1 ♀; Colima, Hacienda Nogueras, 1 ♀, Colima, 1 ♀.

Myiozetetes granadensis obscurior Todd

Myiozetetes granadensis obscurior TODD, 1925 (July 15), Proc. Biol. Soc. Wash., XXXVIII, p. 95—São Paulo de Olivença, Brazil; ♂; Carnegie Mus.

All the Peruvian birds at hand belong to this dark form. I have seen no specimens from Tumbez whence there is an isolated record which Hellmayr has assigned to typical *granadensis* along with birds from western Ecuador and western Colombia. I am unable to follow this assignment. Our series of birds from western Colombia and western Ecuador agree almost exactly in color with *obscurior* but match *granadensis* in size. The difference is size between the two forms is appreciable in both sexes but is more marked in the males. Thus, *granadensis* males have the wing 85.25–91.5 mm.; *obscurior*, 89–96.75; west-coast birds, 85.5–88.5. It is impossible to refer the west-coast specimens either to *granadensis* or to *obscurior* without weakening the characters, either of size or color, which distinguish the two forms. I believe, therefore, that a new subspecies should be recognized from this region as described below.

Records from Perú which belong with *obscurior* are from Tarapoto, Yurimaguas, Cosñipata, and Yahuarmayo.

Myiozetetes granadensis occidentalis, new subspecies

TYPE from Barbacoas, southwestern Colombia. No. 117,977, American Museum of Natural History. Adult male collected August 12, 1912, by William B. Richardson.

DIAGNOSIS.—Darker above than *M. g. granadensis* of southern Central America and with a greater suffusion of yellow on the throat and a lesser average amount of white on the forehead. Similar in color to *M. g. obscurior* of the Amazonian side of the Andes and the upper Orinoco region, but size smaller, like *granadensis*.

RANGE.—Western side of the Andes in Colombia and Ecuador and, presumably, extreme northwestern Perú, and easternmost Panamá.

DESCRIPTION OF TYPE.—Forehead narrowly dull whitish; remainder of exposed portions of top of head Deep Grayish Olive, tinged with Yellowish Olive and with rather strong dusky brown shaft-streaks; the area immediately behind the forehead clearer gray; center of crown with a large, concealed patch of Flame Scarlet which pales through yellow to whitish on the periphery; back Olive-Citrine with definitely contrasting central areas of brown which are not entirely concealed by the overlapping olive tips and margins; upper tail-coverts dull brown, with narrow light buffy brown margins. Lores sooty brownish, the color passing under the eye and involving most of the auricular region; malar area, chin, and throat whitish, strongly tinged with yellow; center of breast, sides, flanks, belly, and under tail-coverts bright Lemon Chrome; sides of breast dark Olive-Citrine. Wings dark brown with outer margins of remiges (except outermost primary) Citron Yellow, narrow on primaries, broader on inner secondaries; greater upper wing-coverts with Citron Yellow outer margins; median series with margins of duller yellow around the tips; lesser series with still duller and more olive terminal margins; inner margins of remiges dull, pale yellow; under wing-coverts Strontian Yellow. Tail dark brown with narrow outer margins Buffy Citrine, nearly obsolete on outermost pair. Bill (in dried skin) blackish; feet brownish black. Wing, 85.5 mm.; tail, 66; exposed culmen, 13; culmen from base, 16.5; tarsus, 17.5.

REMARKS.—Female much like the male in general coloration but smaller and without the scarlet crown-patch or with a very few feathers of a duller red. Wing, 80.5–82 mm.; tail, 61–69.

This form is, in a sense, intermediate between *granadensis* and *obscurior* but its characters are not individually intermediate ones. It presents, therefore, a new combination of certain characters of the other forms, not intrinsically new characters. Geographically, it is relatively isolated. From *obscurior* it is separated by the heights of the Andes; from *granadensis* it appears to be separated by the whole of eastern Panamá. I have no specimens or records of true *granadensis* farther east than the Canal Zone which is the type locality of that form. Bangs and Barbour (1922, Bull. Mus. Comp. Zoöl., LXV, p. 218) record a male and female from Jesusito, near Mt. Sapo, eastern Panamá, which they found to be like western Colombian birds rather than like Canal Zone specimens. Evidently the Jesusito skins also belong to *occidentalis*.

In this form, as in *obscurior*, the gray of the top of the head is darker and duller than in *granadensis;* the whitish forehead seems never to reach as great an extreme of broad, silvery white as in the Central American form; the darker olive of the back is rendered still darker by the effect of dark mottling from the centers of the feathers.

As in the related subspecies, young birds differ from adults by generally duller hues except that the borders of the remiges and their upper coverts are cinnamomeous instead of yellow and that the rectrices are

encircled by similar cinnamomeous margins. Neither sex in this plumage has a scarlet crown-patch.

Judging by analogy and geographical position, the record of *granadensis* from Tumbez, Perú, must belong with this new form.

SPECIMENS EXAMINED

M. g. granadensis.—NICARAGUA: Los Sabalos, 1 ♂, 2 ♀. COSTA RICA: Boruca, 1 ♀; Puerto Jimenez, 1 ♂; Limón, 1 ♂, 1 ♀; Palmar, 1 ♂. PANAMÁ: [near Lion Hill], 1 ♂, 1 ♀ (cotypes of *granadensis*); Almirante, 5 ♂, 2 ♀; Boqueron, 1 ♂, 1 ♀; Bogava, 1 ♀; Río Trinidad, above Cuchirbo, 1 ♀; El Banco, Chiriqui, 1 ♂; Gatun, 2 ♂, 1 ♀; Afuera Island, 1 ♀.

M. g. occidentalis.—COLOMBIA: Alto Bonito, 2 ♀; Juntas, 1 ♀; Barbacoas, 1 ♂ (type); San José, Cauca, 1 ♀; Bagado, 1 ♂. ECUADOR: San Javier, 2 ♂, 2 ♀; Cachabí, 1 ♀; Nanegal, 1 (?).

M. g. obscurior.—COLOMBIA: "Bogotá," 2 [♂], 1 [♀]; Villavicencio, 1 ♀; Mambito, 1 ♀. VENEZUELA: Boca de Sina, Río Cunucunumá, 1 ♀; La Prición, Río Caura, 1 ♂. ECUADOR: below San José, 1 ♂, 3 ♀; Río Coca, 1 ♀; Coca, Río Napo, 3 ♂; Macas, 1 ♂; mouth of Río Curaray, 1 ♂, 1 ♀. PERÚ: Río Seco, west of Moyobamba, 1 ♂, 1 ♀; Juanjuí, 1 ♀; Orosa, 2 ♀; Sarayacu, 1 ♂, 1 ♀; Lagarto, 2 ♂, 2 ♀; Santa Rosa, 3 ♂, 1 ♀; mouth of Río Urubamba, 2 ♂, 3 ♀; Astillero, 1 ♂; La Pampa, 1 ♀; Río Tavara, 1 ♂; Perené, 1 ♂, 1 ♀. BOLIVIA: Todos Santos, 1 ♂, 1 ♀.

Pitangus sulphuratus sulphuratus (Linnaeus)

Lanius sulphuratus LINNAEUS, 1766, 'Syst. Nat.,' ed. 12, I, p. 137—based on BRISSON, 1760, 'Orn.,' p. 176, Pl. XVI; Cayenne.

Corvus leucogaster BODDAERT, 1783, 'Tabl. Pl. Enl.,' p. 15—based on DAUBENTON, 'Pl. Enl.,' 249; Cayenne.

Corvus flavus GMELIN, 1788, 'Syst. Nat.,' I (1), p. 373—based on DAUBENTON, *loc. cit.;* Cayenne.

Peruvian birds appear to be inseparable from Cayenne specimens as well as from other examples in a series of two hundred and thirty specimens from various parts of the ascribed range. This range follows the south bank of the Amazon eastward to the right bank of the Tapajoz and perhaps to Pará, crosses the Amazon to Faro and Monte Alegre, and passes northward to the three Guianas, ascends both banks of the Rio Negro to near the mouth of the Uaupés, and extends northward from eastern Perú to eastern Ecuador.

Hellmayr [1927, Field Mus. Nat. Hist. Publ., Zool. Ser., XIII (5), p. 152] has assigned specimens from Boavista and Serra da Lua, Rio Branco, to *sulphuratus*, but a female from Frechal, Rio Surumú, and two of the same sex from Limão, Rio Cotinga, upper affluents of the Branco, belong to *trinitatis*. It may be noted here also that *trinitatis* occurs on the mainland of Venezuela at Guiria, Paria Peninsula, and El

Pilar (Province of Sucre). Two specimens from Ayacucho (Río Orinoco), Venezuela, are far from typical *rufipennis* although they appear to represent the extreme of variation in that form in the direction of *sulphuratus*.

As a matter of fact, all of the Orinocan specimens (excluding those from the region of the mouth of that stream which cannot be separated from *trinitatis*), are at one end of the range of variation while the Santa Martan specimens are at the other. Birds from near the type locality of *rufipennis* (Caracas, Venezuela) are exactly intermediate. The Santa Martan birds are very rufescent on the upper surface; the Orinocan examples are grayer; the Ayacucho birds are decidedly gray, with hardly a tinge of rufous on the back, although the amount of rufous in the wings and tail is as in other examples of this form. Certain specimens of *trinitatis* have a nearly equal amount of rufescence in the wings, including Trinidad examples, but they are exceptions. If Caracas and other north-Venezuelan birds could be assigned clearly to the Santa Martan or Orinocan series, it might be feasible to recognize two subspecies where now only one may be distinguished with certainty. The Colombian birds from the upper Magdalena, including some of the trade-skins from "Bogotá," have a slight tendency toward a duller, less rufous, tone on the back than lower Magdalena examples which agree with Santa Martan birds.

The two skins from Villavicencio, eastern Colombia, discussed by Chapman (1917, Bull. Amer. Mus. Nat. Hist., XXXVI, p. 462) still remain unassignable to any recognized form unless to *trinitatis*. The supposedly sharper definition between the rufous and blackish areas of wing and tail, in comparison with *trinitatis*, proves to be of inconstant value since it falls within the individual variation of a series of *trinitatis*. Unfortunately, there is a wide area between Villavicencio and the nearest point from which *trinitatis* is known and a very narrow region through which any connection could exist without interruption. As stated above, the two available specimens from Ayacucho, on the upper Orinoco, seem to be intermediate between *rufipennis* and *sulphuratus* and do not suggest *trinitatis*. The upper Rio Negro is occupied by true *sulphuratus* with no observable tendencies in any particular direction. If the Villavicencio birds are *trinitatis*, as the evidence indicates, the line of connection, if it exists, must pass somewhere near the boundary of Brazil and Venezuela, through the Cassiquiare region, and across eastern Colombia to the foot of the eastern Andes, an area from which there is no record of the species whatever.

There are traces of a dusky shaft-streak on the primaries of some "Bogotá" specimens, but hardly more than in various examples of *rufipennis* from other parts of its range. All the "Bogotá" birds, therefore, are assignable to *rufipennis* and none to *trinitatis*. A series from extreme eastern Colombia might show some clear distinction from *trinitatis* in birds from that region, but at present I am unable to find a satisfactory character. If the peculiarities of the Villavicencio birds are due to transition toward *sulphuratus* from *rufipennis*, it has taken a different course from that followed on the upper Orinoco and may prove to be an additional link in the chain of evidence suggesting the subspecific separation of Orinocan and Colombian representatives of *rufipennis*. More material is needed to unravel the taxonomic tangle here in evidence.

Additional Peruvian records of *sulphuratus* are from Tarapoto, Pebas, and Moyobamba.

In a comparative study of the Central American forms of the species, I am unable to recognize *palliatus* (van Rossem, 1937, Proc. Biol. Soc. Wash., L, p. 25—Alamor, Sonora, Mexico) as distinguished from *derbianus*. In fact, *guatimalensis* Lafresnaye, is clearly distinguishable only when the range is allowed to include Costa Rica, Nicaragua, and western Panamá, especially the last-named area. Many Guatemalan birds may be matched by Mexican and Texan examples. There may be some uncertainty with regard to *pallidus* (Griscom, 1930, Amer. Mus. Novit., No. 414, p. 4—Sacapulas, Guatemala). The type and unique example is in molt and the freshly acquired feathers appear to be similar to corresponding ones in *guatimalensis*, while the older, worn plumes may not be distinguished from similar worn feathers in some skins from other parts of Guatemala. As exception to this generalized statement, the under tail-coverts are distinctly paler and less yellowish than in any other Guatemalan bird, worn or fresh, and there may be other differences which would be apparent in a fully freshly plumaged example. Consequently, *pallidus* may be recognized provisionally until its validity can be successfully either substantiated or disproved.

The distinctions between *sulphuratus* and *maximiliani* and between *maximiliani* and *bolivianus* are not sharply delimited. From eastern Perú along the south bank of the Amazon to the east bank of the Tocantins, there is no clear divergence toward *maximiliani*. As pointed out by Hellmayr, however, various birds from southeastern Brazil closely approximate typical *sulphuratus* although the average is fairly distinct. On the other hand, typical *bolivianus* from the Bolivian highlands is easily distinguishable from *maximiliani*, but there is a broad

area of intergradation in which the population is variously intermediate between the two extremes. I follow Hellmayr, therefore, in his delimitation of the distributional areas of these two forms, although the line is somewhat arbitrarily drawn.

Specimens Examined

P. s. derbianus.—United States: Texas, Brownsville, 37; Hidalgo, 1; Lomita, 2. Mexico: 58.

P. s. guatimalensis.—Guatemala: 30. Costa Rica: 5. Nicaragua: 3. Panamá: Almirante, 8; Cocoplum, 8.

P. s. pallidus.—Guatemala: Sacapulas, 1 ♂ (type).

P. s. caucensis.—Colombia: Cali, 7 ♂ (incl. type), 2 ♀; La Florida, 1 ♂.

P. s. rufipennis.—Venezuela: Cotiza, Caracas, 1 ♂, 1 ♀; Barquismeto, Lara, 3 ♂; Las Trincheras, Carabobo, 1 ♀; Cumaná, 1 (?); San Antonio, Bermúdez, 1 ♂; Cumanacoa, 1 ♀; San Estéban, 1 (?); Campos Alegre Valley, 1 ♂; plain of Cumaná, 1 ♀; Cuchivano, 1 ♂; La Florida, Cumanacoa, 1 ♂; Rio Orinoco, Ciudad Bolívar, 6 ♂, 1 ♀; Altagracia, 1 ♂, 6 ♀; Caicara, 2 ♂, 1 ♀; Quiribana de Caicara, 1 ♀; Ayacucho, 2 ♂. Colombia: Santa Marta, 3 ♂, 1 ♀, 1 (?); Bonda, 2 ♀, 1 (?); Carthagena, 2 (?); La Playa, 1 ♂, 1 (?); Calamar, 3 ♂; "N. Antioquia," 6 (?); within 20 miles of Honda, 1 ♂; Chicoral, 1 ♂; Honda, 1 ♂; Andalucia, 1 ♂; "Bogotá," 9 (?).

P. s. trinitatis.—Trinidad: Caparo, 6 ♂, 4 ♀ (incl. type); (no locality), 4 (?); Chaguaramas, 2 ♂; "Geelet," 1 ♀; Carenage, 1 ♂; Heights of Aripo, 1 ♂; Pointe Gourde, 1 ♂; Princestown, 2 ♂. Venezuela: Guiria (Paria Peninsula), 1 ♂; El Pilar (Sucre), 1 ♀; Las Barrancas (Orinoco Delta), 1 ♂; "Orinoko-skin," 1 (?). Brazil: Rio Cotinga, Limão, 2 ♀; Rio Surumú, Frechal, 1 ♀. Colombia: Villavicencio, 2 ♀.

P. s. sulphuratus.—French Guiana: Cayenne, 3 ♂, 4 ♀, 1 (?); Mana, 1 ♀; Approuague, 2 ♂, 1 ♀. Dutch Guiana: near Paramaribo, 3 ♂, 4 ♀, 1 (?); Albina, 1 ♂, 1 ♀. British Guiana: Essequibo River, 1 (?); Demerara, 2 (?). Brazil: Faro, 7 ♂, 7 ♀; Rio Negro, Igarapé Cacao Pereira, 30 ♂, 8 ♀, 2 (?); Campos Salles, Manáos, 4 ♂, 2 ♀; Muirapinima, 1 ♂, 1 ♀; Yavanari, 2 ♂, 1 ♀; Santa Maria, 2 ♂, 2 ♀; Tabocal, 4 ♂, 3 ♀; Yucabi, 1 ♂, 2 ♀; Santa Isabel, 1 ♂; San Gabriel, 1 ♂; "Brazil," 1 ♂, 1 ♀; Rio Tocantins, Baião, 3 ♂, 2 ♀; Mocajuba, 3 ♂, 2 ♀; Rio Xingú, Porto de Moz, 1 ♂, 4 ♀; Tapará, 3 ♀; Rio Majarý, Recreio, 1 ♂; Rio Tapajoz, Aramanay, 5 ♂, 5 ♀; Arumatheua, 1 ♀; Igarapé Brabo, 4 ♂, 4 ♀, 1 (?); Villa Bella Imperatríz, Lago Andirá, 3 ♂, 3 ♀; Boca Rio Andirá, 1 ♂; Santa Clara, 8 ♂; Rio Madeira, Borba, 4 ♂, 1 (?); Igarapé Auará, 1 ♂, 1 ♀; Rosarinho, 6 ♂, 8 ♀, 1 (?); Santo Antonio de Guajará, 2 ♂, 3 ♀; Rio Amazonas, Teffé, 4 ♂, 6 ♀. Ecuador: Río Suno, above Avila, 1 ♂; Coca, Río Napo, 1 ♂; mouth of Río Curaray, 3 ♂, 4 ♀; mouth of Lagarto Cocha, 1 ♀; "Equateur," 2 (?). Perú: Puerto Indiana, 1 ♂, 2 ♀; Iquitos, 1 ♂; Nauta, 1 ♀; Orosa, 1 ♀; mouth of Río Urubamba, 1 ♂, 1 ♀; Santa Rosa, Río Ucayali, 2 ♂, 1 ♀; Sarayacu, 5 ♂, 1 ♀; Astillero, 3 ♂, 1 ♀; Yurimaguas, 1 ♂.

P. s. maximiliani. Brazil: State of Bahia, 3 ♂, 2 ♀, 4 (?); Minas Geraës, 5 ♀; Santa Catharina, 5 ♂, 3 ♀, 2 (?); Ceará, 1 ♂, 2 ♀; Paraná, 1 ♀; São Paulo,

1 ♂, 2 ♀; Goyaz, 1 ♂, 2 ♀; Rio de Janeiro, 1 ♂, 3 ♀, 2 (?); Matto Grosso, 4 ♂, 2 ♀; Maranhão, 8 ♂, 2 ♀, 1 (?). BOLIVIA: Trinidad, 1 ♂.

P. s. bolivianus.—BOLIVIA: 11 ♂, 11 ♀. PARAGUAY: 5 ♂, 1 ♀. ARGENTINA: 27 ♂, 11 ♀, 2 (?). BRAZIL: State of Rio Grande do Sul, 10 ♂, 7 ♀, 5 (?).